LISTING OF CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended): A process for joining a gas diffusion layer to a separator plate of an electrochemical cell comprising the steps of:~~, wherein the~~

(a) providing a gas diffusion layer comprising ~~comprises~~ a porous body~~, and the~~ comprising a plurality of pores, said gas diffusion layer abutting an electroconductive separator plate, wherein the electroconductive separator plate comprises ~~at least one~~ a plurality of landing surfaces formed on ~~a~~ the first surface of the electroconductive separator plate and a flow field channel formed between the landing surfaces, ~~and the separator plate~~ and the landing surface comprising a polymer and conductive filler~~,~~ ; and

(b) ~~the process comprising the step of~~ welding the landing surfaces of the electroconductive separator plate to the gas diffusion layer ~~by impregnating~~ some of the polymer on the landing surface within the pores ~~a portion~~ of the porous body, thereby forming a plurality of welds between the landing surfaces and the gas diffusion layer spaced apart by the flow field channels.

2 (Currently amended): The process of claim 1, wherein the welding ~~step~~ is selected from the group consisting of resistance welding, vibrational welding, ultrasonic welding, and laser welding~~, heat lamination, and hot bonding techniques~~.

3. (Original): The process of claim 2, wherein the welding step is resistance welding.

4. (Currently amended): The process of claim 3 wherein resistance welding comprises the further steps of:

(a) placing the landing surface in contact with the gas diffusion layer;

(b) applying an electrical current between the gas diffusion layer and the electroconductive separator plate to produce localized heat at the landing surface sufficient to melt the thermoplastic polymer in the landing surface and produce molten polymer;

(c) applying pressure to the landing surface and gas diffusion layer to allow the molten polymer to impregnate within ~~into~~ the ~~portion~~ pores of the porous body; and

(d) ceasing to apply the electrical current to allow the molten polymer to cool and solidify.

Claims 5-22. (Cancelled)

23. (Previously presented): The process of claim 4, wherein the electrical current is between about 0.01 amperes/mm^2 and about 5 amperes/mm^2, its voltage is between about 1 and about 25 volts and the current is applied for a time from about 0.5 to about 100 seconds.

24. (Previously presented): The process of claim 23, wherein the electrical current is between about 0.8 and about 1.1 amperes/mm^2.

25. (Previously presented): The process of claim 4 wherein the pressure applied is between about 1 and about 200 psig.

26. (Previously presented): The process of claim 25 wherein the pressure applied is between about 10 and about 120 psig.

27. (Previously presented): The process of claim 25 wherein the pressure applied is between about 30 and about 70 psig.

28. (Previously presented): The process of claim 4 wherein the electrical current is applied using external electrodes.

29. (Previously presented): The process of claim 2, wherein the welding step is vibration welding.

30. (Currently amended): The process of claim 29, wherein the vibration welding step comprises the further steps of:

(a) placing the landing surface in contact with the gas diffusion layer;

(b) applying a vibrational force between the separator plate and the gas diffusion layer to produce localized heat at the landing surface sufficient to melt the thermoplastic polymer at the landing surface;

(c) applying pressure to the landing surface and gas diffusion layer to allow the molten polymer to impregnate within ~~into~~ the ~~portion~~ pores of the porous body; and

(d) ceasing to apply the vibrational force to allow the molten polymer to cool and solidify.

31. (Previously presented): The process of claim 30 wherein the vibrational force is applied at a frequency of between about 100 and about 500 cycles per second for a time from about 3 to about 100 seconds at an amplitude of between about 0.5 and about 5 mm.

32. (Previously presented): The process of claim 30 wherein the pressure applied is between about 1 and about 200 psig.

33. (Previously presented): The process of claim 32 wherein the pressure applied is between about 10 and about 120 psig.

34. (Currently amended): The process of claim 1 wherein the polymer is a thermoplastic polymer selected from the group consisting of melt processible polymers, partially fluorinated polymers, thermoplastic elastomers, liquid crystalline polymers, polyolefins, polyamides, aromatic condensation polymers, and mixtures thereof.

35. (Currently amended): The process of claim ~~34~~1, wherein the polymer is a blend ~~of about 1 wt% to about 30 wt%, preferably about 5 wt% to about 25 wt%,~~ of maleic anhydride modified polymer with the thermoplastic polymer, partially fluorinated polymers and liquid crystalline polymer, and wherein the

maleic anhydride modified polymer comprises about 5 wt% to about 25 wt% of the polymer.

36. (Previously presented): The process of claim 1 wherein the conductive filler is graphite fiber or graphite powder.

37. (Previously presented): The process of claim 1 wherein the landing surface comprises a polymer rich outer layer.

38. (Currently amended): The process of claim 37, wherein the polymer rich outer layer comprises between about 25 wt% and about 100 wt% ~~polymer, preferably between about 50 wt% and about 100 wt% polymer, and most preferably about 100 wt%~~ polymer.

39. (Previously presented): An electrochemical cell component comprising a gas diffusion layer welded to a separator plate using the process of claim 1.

40. (Previously presented): An electrochemical cell comprising a gas diffusion layer welded to a separator plate using the process of claim 1.

41. (Previously presented): An electrochemical cell comprising the electrochemical cell component of claim 39.

42. (Previously presented): An electrochemical cell stack comprising a plurality of the electrochemical cells of claim 41.

43. (Previously presented): An electrochemical cell component of claim 39, wherein the electrochemical cell component has a resistivity less than a resistivity of a system comprising a gas diffusion layer that is not welded to a plate.

44. (Previously presented): An electrochemical cell component of claim 39, wherein the surface of the separator plate comprises open flow field channels and the gas diffusion layer does not sink into the open flow field channels.